



Dual Operational Amplifiers for Audio Signals

Description

SKI4580 is a dual operational amplifier specifically designed for improved tone control, ideally suited for audio applications.

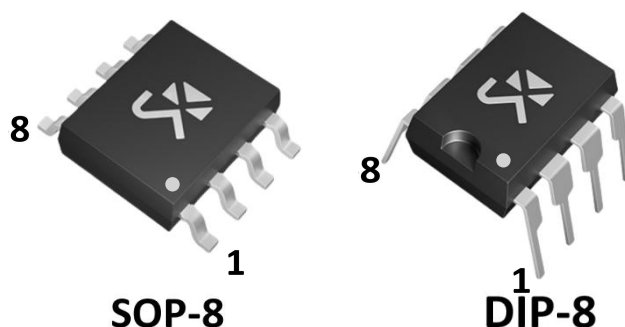
It features low noise, high gain-bandwidth product, high output current, and low distortion. It is optimally suited for acoustic electronic components such as audio preamplifier and active filters, as well as industrial measurement instruments. It is also suitable for headphone amplifiers requiring high output current.

SKI4580 is available in SOP-8 and DIP-8 packages.

Features

- Low input noise voltage, internal ESD protection
- Low distortion ratio: approximately 0.0005%
- Slew rate: $5\text{V}/\mu\text{s}$
- Unit gain bandwidth product: 10MHz
- Supply voltage: Single supply: 4V to 40V
- Dual supply (absolute maximum): $\pm 2\text{V}$ to $\pm 22\text{V}$

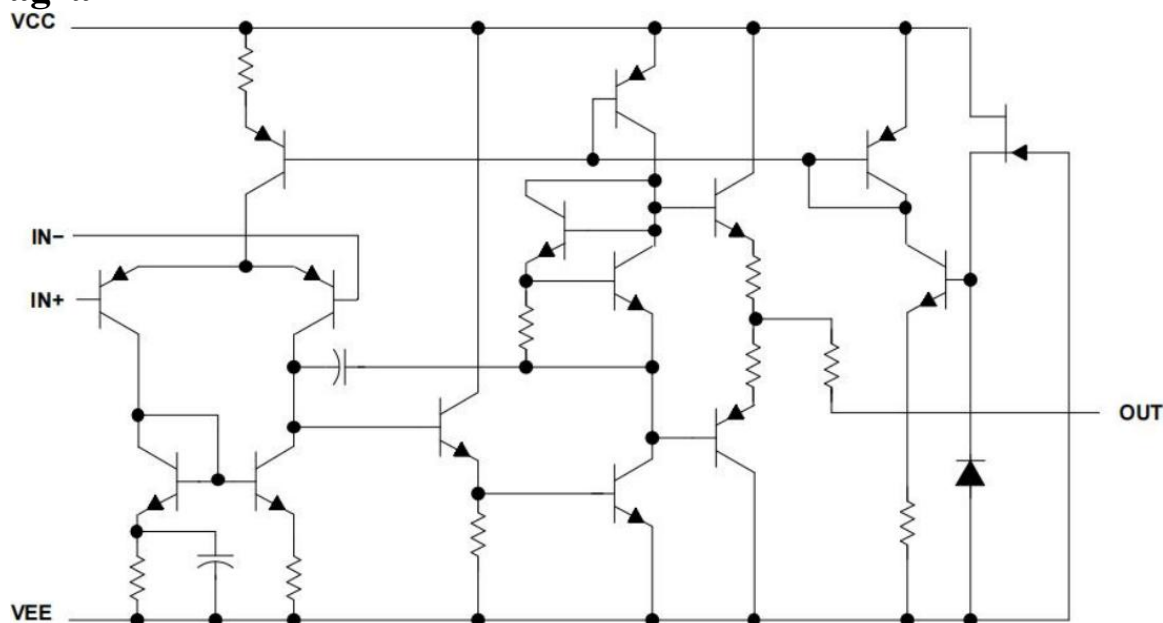
Package Outline Drawing



Applications

- Active Filters
- Compensation Amplifiers
- Audio Preamplifiers
- Headphone Amplifiers
- Low Voltage Handheld Electronic Instruments

Block Diagram





SKI4580

Ordering Information

Type	Marking	Package
SKI4580-D8	4580	DIP-8
SKI4580-P8	4580	SOP-8

Pin Description

Pin Number	Pin Name	I/O	Description	Pin Configuration Diagram
1	1OUT	O	Channel 1 Output	
2	1IN-	I	Channel 1 Inverting Input	
3	1IN+	I	Channel 1 Non-Inverting Input	
4	V _{EE}	P	Negative Power Supply	
5	2IN+	I	Channel 2 Non-Inverting Input	
6	2IN-	I	Channel 2 Inverting Input	
7	2OUT	O	Channel 2 Output	
8	V _{CC}	P	Positive Power Supply	

Absolute Maximum Ratings (T_A=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Supply Voltage	V _{CC}	±22	V
Differential Input Voltage	V _{ID}	±20	V
Maximum Operating Junction Temperature	T _J	150	°C
Operating Ambient Temperature	T _A	-20~+85	°C
Storage Temperature	T _{STG}	-55~+150	°C
Lead Temperature(Soldering , 10 s)	T _W	260	°C

Electrical Characteristics(T_A=25°C, V_{CC}=15V,V_{EE}=-15V unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Supply Current(per channel)	I _{CC}	V _O =0V,R _L =∞	-	6	-	mA
Input Offset Voltage	V _{IO}	V _O =0V	-	±0.3	±3	mV
Input Offset Current	I _{IO}	V _O =0V	-	-	±200	nA
Input Bias Current	I _B	V _O =0V	-	-	±500	nA
Input Common-mode Voltage	V _{ICM}		-	±12	±13	V
Output Voltage swing	V _{OM}	R _L =10KΩ	±12	±14	-	V
		R _L =2KΩ	±10	±13	-	
Output Current	I _{SOURCE}		80	-	120	mA
	I _{SINK}		-150	-	-120	mA
Open-Loop Voltage Gain	A _{OL}	V _O =±10V,R _L <2KΩ	-	100	-	V/mV
Common Mode Rejection Ratio	CMRR		-	100	-	dB
Power Supply Rejection Ratio	PSRR		-	100	-	dB
Gain Bandwidth Product	GBWP		-	10	-	MHz
Slew Rate	S _R		-	5	-	V/uS



Typical Characteristics

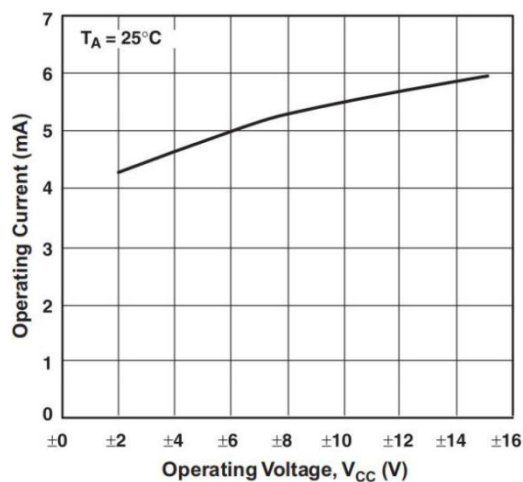


Fig 1. Operating Current vs Operating Voltage

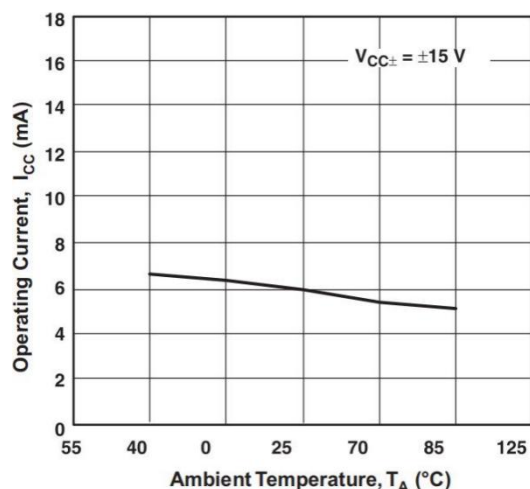


Fig 2. Operating Current vs Ambient Temperature

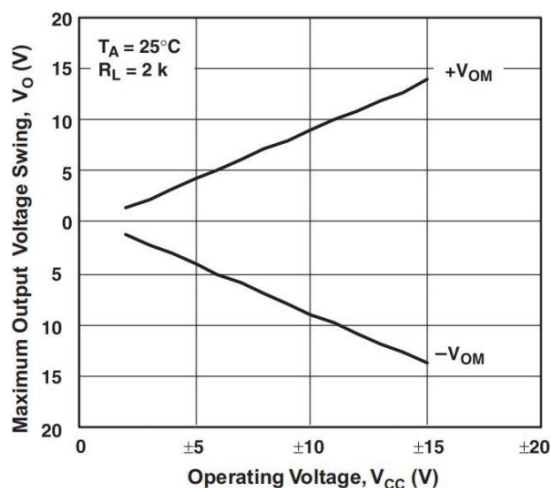


Fig 3. Maximum Output Voltage Swing vs Operating voltage

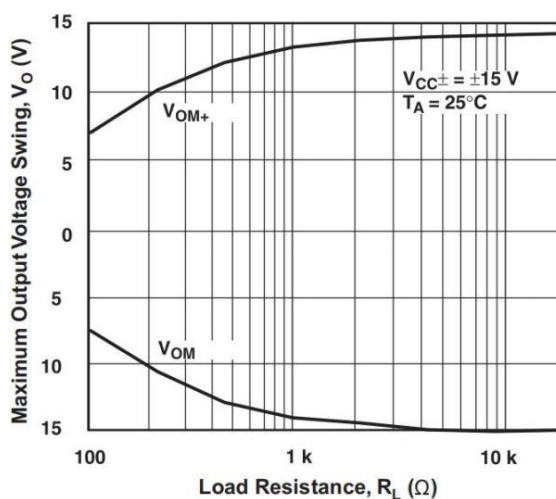


Fig 4. Maximum Output Voltage Swing vs Load Resistance

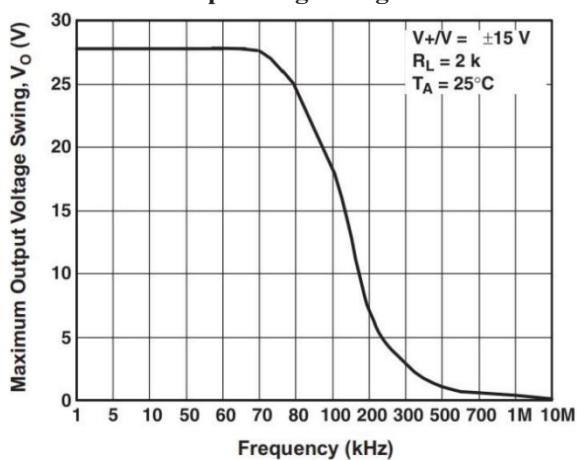


Fig 5. Maximum Output Voltage Swing vs Frequency

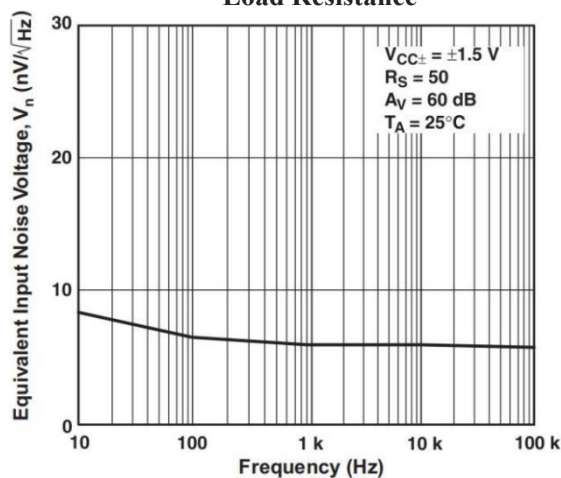


Fig 6. Equivalent Input Noise Voltage vs Frequency

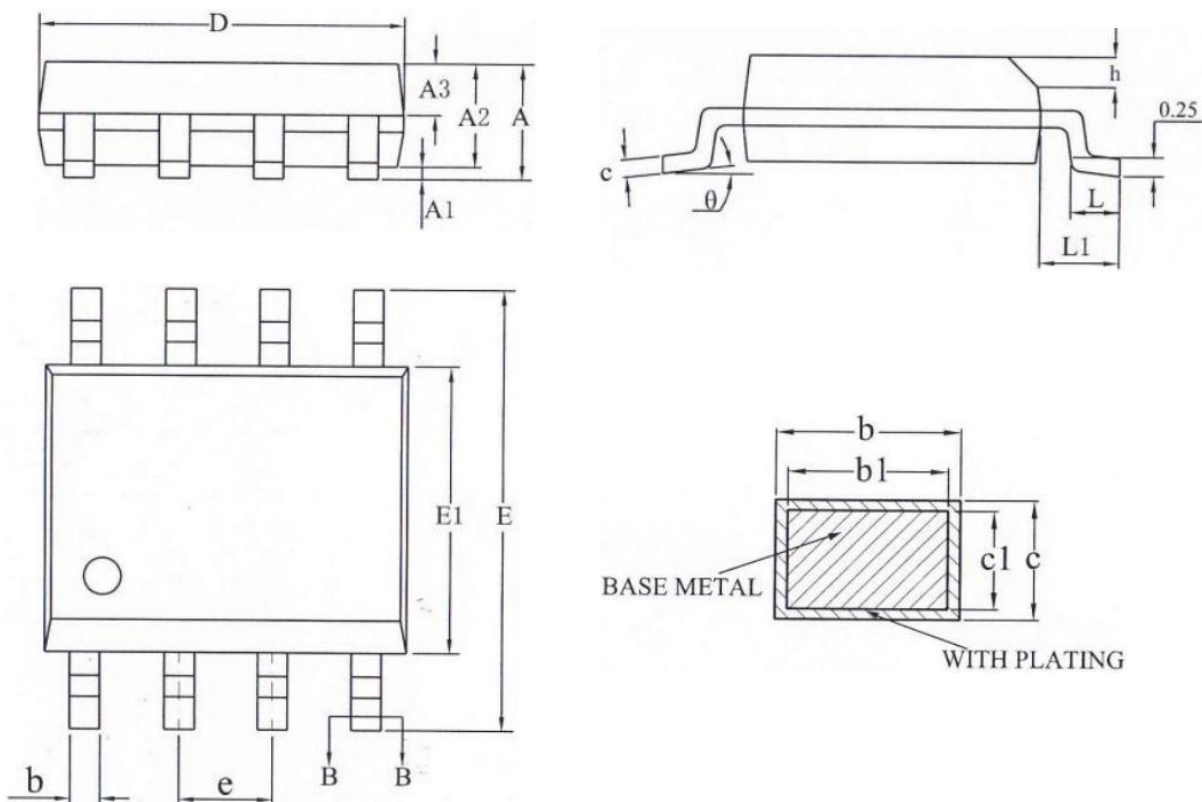


SKI4580

Package Information

SOP-8

Dimensions in mm



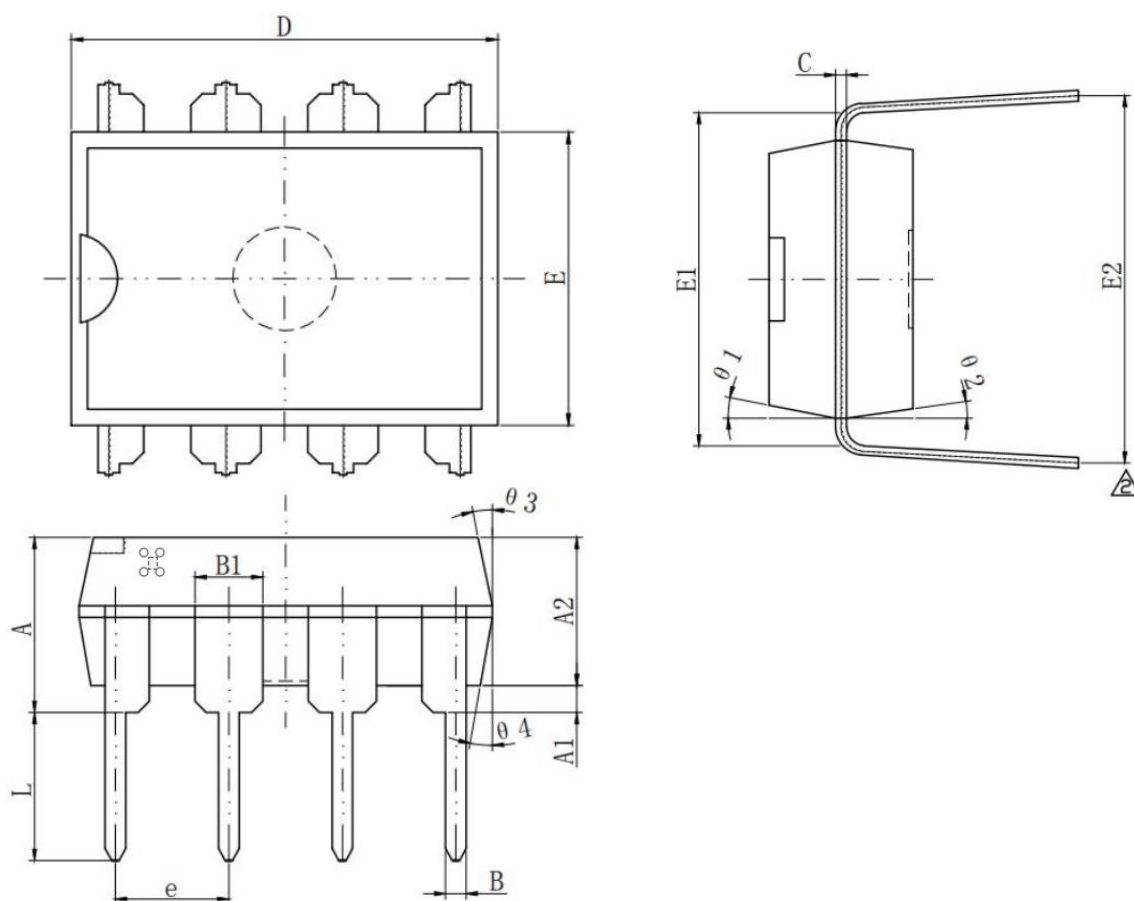
Symbol	Dimensions In Millimeters			Symbol	Dimensions In Millimeters		
	Min	Nom	Max		Min	Nom	Max
A	-	-	1.75	D	4.80	4.90	5.00
A1	0.10	-	0.225	E	5.80	6.00	6.20
A2	1.30	1.40	1.50	E1	3.80	3.90	4.00
A3	0.60	0.65	0.70	e	1.27 BSC		
b	0.39	-	0.47	h	0.25	-	0.50
b1	0.38	0.41	0.44	L	0.50	-	0.80
c	0.20	-	0.24	L1	1.05 (REF)		
c1	0.19	0.20	0.21	θ	0°	-	8°



Package Information

DIP-8

Dimensions in mm



Symbol	Dimensions In Millimeters			Symbol	Dimensions In Millimeters		
	Min	Nom	Max		Min	Nom	Max
A	3.75	3.90	4.15	E1	7.35	7.62	7.85
A1	0.60	-	-	E2	8.00	8.40	8.80
A2	3.15	3.30	3.40	e	2.54 (BSC)		
B	0.38	0.46	0.56	L	3.00	3.30	3.60
B1	1.52 (BSC)			θ1	10°	-	14°
C	0.20	0.25	0.34	θ2	8°	-	12°
D	9.00	9.25	9.40	θ3	10°	-	14°
E	6.20	6.35	6.50	θ4	8°	-	12°



Shikues Disclaimer

1.Accuracy of Information and Right to Modify

The information provided in this document is for reference only. Shikues reserves the right to make changes to this document and to the specifications of the products described herein at any time, without prior notice, for the purpose of improving reliability, function, design, or for any other reason. It is the customer's responsibility to obtain and verify the latest product information and specifications before making any final design, procurement, or usage decisions.

2.No Warranty

Shikues makes no express or implied warranties, representations, or guarantees regarding the suitability of its products for any particular purpose.

Shikues assumes no liability for any assistance provided or for the design of customer products. All products are supplied "as is."

3.Intended Use and Limitation of Liability

The products described in this document are intended for use in general-purpose electronic devices. They are neither designed nor tested nor authorized for use in transportation equipment or applications requiring high reliability. Unless expressly authorized in writing by Shikues, these products must not be used as critical components in life-support systems or any applications where failure could directly pose a risk to human life (including, but not limited to, medical devices, transportation systems, aerospace equipment, nuclear facilities, and safety-critical systems).

Shikues assumes no responsibility or liability for any consequences arising from the use of its products in unauthorized or unintended applications.

Neither Shikues nor its representatives shall be held liable for any resulting damages.

4.Intellectual Property

This document does not grant any express or implied license—whether by estoppel, implication, or otherwise—to use any intellectual property rights of Shikues.